lea

Chapter Eleven | Delgado Index | Chapter Thirteen

Jose Delgado's "Physical Control of the Mind"

Electrical Stimulation of the Brain (ESB)

The master control for the whole body resides in the brain, and the new methodology of implanted electrodes has provided direct access to the centers which regulate most of the body's activities. The brain also constitutes the material substratum of mental functions, and by exploring its working neurons we have the possibility of investigating experimentally some of the classical problems of mind-brain correlations. In addition to new answers, implantation of electrodes has introduced new problems: Is it feasible to induce a robotlike performance in animals and men by pushing the buttons of a cerebral radio stimulator? Could drives, desires, and thoughts be placed under the artificial command of electronics? Can personality be influenced by ESB? Can the mind be physically controlled?

In scientific literature there is already a substantial amount of information demonstrating the remarkable effects induced by ESB. The heart, for instance, can be stopped for a few beats, slowed down, or accelerated by suitable stimulation of determined cortical and subcortical structures, illustrating the physiological reality that it is the brain which controls the heart, and not vice versa. Respiratory rate and amplitude have been driven by ESB; gastric secretion and motility have also been modified by brain stimulation; the diameter of the pupil can be adjusted at will (Figure 7) from maximum constriction to maximum dilatation, as if it were a photographic camera, simply by changing the intensity knob of an electric stimulator

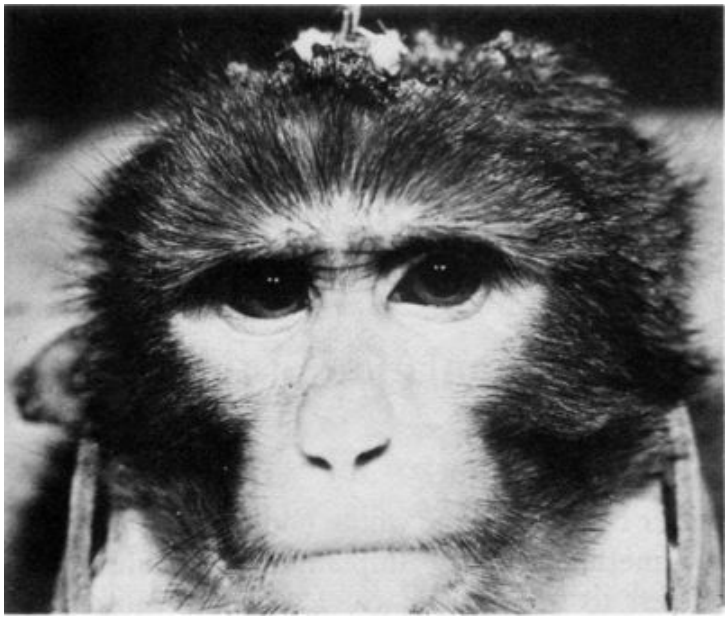

Figure Seven
The diameter of the pupil can be electrically controlled as if it were the diaphragm of a photographic camffa. Above, the normal eyes, and below, constriction of the right pupil evoked by stimulation of the hypothalamus

Some effects of ESB such as this are indefatigable and can be maintained for days as long stimulation is applied (61).

---

connected with the hypothalamic region of the brain (61). Most visceral functions have been influenced by ESB, as have sensory perceptions, motor activities, and mental functions. Rather than examine each type of finding in detail, we have selected a few typical examples to illustrate the main aspects of electrical control of the brain and its behavioral consequences.

Chapter Eleven | Delgado Index | Chapter Thirteen